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ABSTRACT

This bibliography is part of a larger study on the cost effectiveness of microteaching, which was conducted by the Higher Educational Research Unit of Monash University on a grant from the Australian Advisory Committee for Research and Development in Education. The bibliography supplements the McAleese and Unwin (1973) bibliography and the list of references contained in Turney et. al. (1973) "Microteaching Research, Theory and Practice." This document is divided into four sections. The first three sections contain 467 unannotated entries and include bibliographies, reviews, and general references. The last section contains annotations for 86 documents. Entries are listed alphabetically by author. (PB)

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BIBLIOGRAPHY
OF
MICROTEACHING

WITH SELECTED ANNOTATIONS

J.C. CLIFT

J.I. MALLEY

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PREFACE

Microteaching which provides a scaled down, non threat teaching situation with feedback for teachers to practice elements of a teaching task, is at the stage of development where it can no longer be considered a new technique. The concept of microteaching originated from Stanford University in 1963, although it is only since 1969 that the significant body of research on microteaching has taken place. The number of research studies and higher degree dissertations which have arrived on the scene since 1969 are in stark contrast to the rather amorphorous journal description of what constituted microteaching, in the pre 1969 era.

The availability of these research writings occurs at an appropriate time, since a recent survey on the use of microteaching in Australia, Turney et al (1973), indicates that even though microteaching techniques are used on a relatively extensive scale, implementation programs within teacher training institutions generally are adopted with scant attention being paid to theory and research evidence. It is hoped that this bibliography, by bringing together the titles contained within the following pages, will help remedy this situation.

This bibliography is part of a larger study on the cost effectiveness of microteaching, which was conducted by the Higher Educational Research Unit of Monash University on a grant from the Australian Advisory Committee for Research and Development in Education.

An interim bibliography for which the initial compilation had been carried out by Mrs. Vivian Nash of the Monash University Library was published in 1971. This bibliography was then added to by an extensive literature search conducted by the research staff of the Higher Educational Research Unit. The final compilation was carried out by the University Teaching and Research Centre at Victoria University of Wellington. The updated and revised edition also contains a number of annotations of the more important entries, where an annotation is provided the entry in the bibliographical list is marked with an asterisk (*).

This bibliography supplements the McAleese and Unwin (1973) bibliography and the list of references contained in Turney et al (1973) Microteaching Research, Theory and Practice.

When an entry is followed by a six figure number prefixed by the letters ED this refers to the E.R.I.C. document number available in microfilm.

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1. ALLEN, D.W. (1966a). A New Design for Teacher Education: the Teacher Intern Program at Stanford University.
A description of the microteaching program at Stanford University, mentioning its aims, function and design, and outlining its distinctive features.

2. ALLEN, D.W. (1966b). Microteaching - A new framework for inservice education.
This general article outlines the uses and the advantages of microteaching particularly in relation to in-service training.

3. ALLEN, D.W. and CLARK, R.J. (1967). Microteaching : its rationale.
This provides the rationale behind the introduction of microteaching at Stanford University in 1963. A teacher training program was needed which was real, low-risk, adhering to learning theory, providing wide ranging experience and economic. The authors claim that once introduced microteaching allowed experimental and practice control, cut out the usual diversions and administrative detail, allowed immediate feedback and practice opportunity and saved time.

4. ALLEN, D. and EVA, A. (1968). Microteaching. Theory and Practice.
A general article defining and describing microteaching, discussing its advantages and listing the applications made at other institutions and organisations in America. Areas for further research related to its successful use are suggested.

5. ALLEN, D.W. and RYAN, K. (1969). Microteaching.
Microteaching is defined by five essential propositions and what it can do. The book includes chapters on the component skills approach, the elements of microteaching giving a practical guide for translating the idea into a functioning clinic including aspects such as patterns of training, supervisors, students their recruitment selection and training and videotape recording.

For microteaching in the pre-service setting the authors list the benefits for beginning teachers, supervisors and normal teacher education programs and they present the concept as a bridge between instruction and classroom practice. The in-service setting is put forward as microteaching's greatest potential particularly in regard to new techniques, team teaching and married women returning to the service. Other settings for microteaching are illustrated by 7 particular microteaching clinics ranging from an inner-only school to microcounselling.

A final chapter on research and microteaching puts forward numerous research possibilities such as self-modifying research into questions about the nature and sequence of elements the learning process in general including the use of models and self-confrontation situations, and the relationship between treatment and student background and aptitudes. According to the authors the effectiveness of microteaching can only be gauged in terms of specific teaching skills.

6. ANDERSON, D.W. and ANTES, J.M. (1972). Microteaching for Preparing Teachers of Culturally Diverse Children.
A study to examine the reactions of graduate interns to Micro Teaching and to determine the relationship between effectiveness in presenting a "micro" lesson and effectiveness in teaching in a regular classroom. During the six-week laboratory school each of the thirty-one interns (from the Graduate Intern Program for the Culturally Diverse - Uni. of Wisconsin) took part in at least four microteaching sessions of five-to-ten-minutes with two interns and five pupils.

Three evaluative instruments were used. A satisfaction index, created from comments in an essay written by each intern, showed 117 positive statements and 35 negative statements regarding microteaching. Evaluative scores were also collected for microteaching performance and for classroom performance, however there was not found to be a significant relationship between the two.

7. ANON (1970). Microteaching enters second generation of research. (Stanford Centre for Research and Development in Teaching).
After considering the expansion of microteaching in its first decade, the author describes the new approaches being taken as it enters its 2nd decade. Teaching skills are to be judged in terms of quality as well as quantity of times exhibited. The cyclical aspects of teaching are being

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investigated where cue attendance can lead to new teaching ideas. Attention to learners thoughts and needs rather than merely the interation processes is seen as a way of teaching a learner to learn. Stress reactions of teachers and ways of overcoming them are being explored. Some system whereby teaching skills are integrated is a possible future development. The student treatment interaction is also a new consideration.

8. AUBERTINE, H.E. (1967). Use of microteaching in training supervising teachers.
A report on the traning of supervisors by their participation in the Whitman Microteaching Clinic. The aim to improve the continuity of the training process as a whole was realized. The article describes the benefits from the microteaching for the training program, the supervisors and the school district.

9. BAKER, E.L. (1969). Relationship between learner achievement and instructional principles stressed during teacher preparation.
The use of five theoretically based learning principles by Peace Corps Trainees in fifteen minute lessons was correlated to some extent with performance gains made by pupils. The Author described the correlations as encouraging.

10. BANDURA, A. (1965). Influence of models' reinforcement contingencies on the acquisition of imitative responses.
This experiment draws a distinction between acquisition and performance of imitative behaviour by demonstrating that vicarious negative reinforcement inhibits performance but not acquisition of imitative responses.

11. BIRCH, D.R. (1969). Guided Self Analysis and Teacher Education.
A report on an experiment designed to evaluate the G.S.A. program of teacher training and to determine which of its three elements of self-confrontation, behavioural coding and self coding produce the most behavioural changes. A detailed description of the aims and rational of the program is given. Forty-eight student teachers formed six treatment groups and a no treatment control group was enrolled in a Social Issues course. Treatment included combinations of the three program factors ranging from minimum to maximum Guided Self Analysis schedules. There were six dependent variables consisting of questioning strategies, response strategies, total teacher talk, teacher/pupil talk patterns and a general index of interaction. Statistical procedures include a factorial univariated analysis of variance with the general index as the dependent variable, a factorial multivariate analysis of variance and least squares estimates of effects for the direction and relative size of effect of significant factors. The full G.S.A. group significantly outperformed all others on all interaction indices except teacher-pupil talk. The only factor to have significant effect on teacher behaviour was self-coding. Interpretations about a trend for inquiry orientation to change teacher behaviour are modified by the fact that the control group was not randomly assigned. Self confrontation alone, or the learning and practice of a behavioural coding system was not effective. Self coding was needed to actuate the effects of the other two factors.

12. BLOOM, J.M. (1969). Videotape and the vitalization of teaching.
A description of the intern microteaching program at the Wisconsin-Milwaukee University, its equipment and procedures and the skills that can be learned and the benefits, such as innovation and spontaneity, that can be gained.

13. BORG, W.R. (1970). Minicourse instructional model.
An overview of the Minicourse Instructional Model series for teachers, a total of seventeen courses in specific teaching skills within a microteaching context, being developed at the Far West Laboratory for Educational Research and shown significant changes in teacher behaviour. The seventeen sequences are described in terms of goals, and the procedures for their research and testing are shown to be tied to (actual) classroom data.

14. BORG, W.R. et al. (1969). Videotape feedback and microteaching in a teacher training model.
An experiment to evaluate the minicourse in an in-service setting and its two factors of practice and structured self feedback. The omission of practice and feedback factor had little effect on changes in teacher behaviour. Possible different procedures for pre-service use of course are suggested.

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15. BORG, W. et al. (1971). The Minicourse : A microteaching Approach to Teacher Education.

The minicourses are an adaption of the Stanford microteaching formula whereby an auto-instructional package, produced by a research and development cycle is used to teach classroom skills. Their development by the Far West Laboratory for Educational Research and Development was prompted by draw-backs of the present teacher education programs and is part of an overall goal of developing a subsystem of teacher education in the area of classroom skills. This book provides a detailed account of the procedures, products and progress of the minicourses.

16. BORG, W.R. (1972). The Minicourse as a Vehicle for Changing Teacher Behaviour : A Three-Year Follow-up.

Report of a three-year follow-up of twerty-four teachers trained in Minicourse I. Post-course evaluation showed that the subjects were significantly above their pre-course levels in ten measurable behaviours. After 39 months they were still superior to pre-course levels in eight of the behaviours.

17. BROWN, A. (1971). Cost effectiveness models in microteaching. Unpublished paper

The problems of measuring changes in distribution and value of output, measuring differential gains, and analysing component parts of the new technique, are outlined in this article. Plans procedures and problems involved in such a cost-effectiveness comparison with the old technique are given. Also the author lists some of the costs for both techniques.

18. CAMERON, W.A. and COTRELL, C.J. (1970). Remote feedback techniques for in-service education. Assessment of microteaching and video-recording in vocational and technical teacher education. Interim Report.

A study of remote teacher education to determine its feasibility and its most appropriate form of feedback. Thirty-nine in-service vocational teachers were randomly assigned to three microteaching treatment groups receiving video-phone, video-mail and video-self-evaluation feedback. The dependent variable was pre- and post-tests scores on the skills of introducing a lesson, questioning and demonstrating a manipulative skill. A satisfaction scale, a teacher mannerisms score and a questionnaire from participants gave further information.

Within groups, no significant differences were found between pre- and post-test scores for questioning in the video-phone group and for introducing a lesson and questioning in the video-mail group. All other differences significant. No between group differences were found in satisfaction. However video-mail and video-self evaluation groups made more positive changes in teacher mannerisms. Participants reactions revealed advantages for all three feed backs. The feasability of remote in-service teacher education with self-administered feedback was demonstrated.

19. CLAUS, K.E. (1969). Effects of modelling and feedback treatments on the development of teachers' questioning skills.

The author hypothesized that cueing by supervisors during modelling and feedback sessions would enhance the component skill of high-order questioning. The treatments used were modelling presented via videotape, practice teaching with videotaping and self-view feedback, with supervisory cueing as the dependent variable.

Criteria was the difference in the number of high-order questions in the first and last session as counted by trained raters using typewritten transcripts of the lesson.

Two-way analysis of variance and analysis of co-variance showed a significantly higher frequency in the last session for the cueing during modelling group. No significant increase was produced by cueing during the feedback session. The group who received cueing in both modelling and feedback sessions showed the greatest increase (in high-order questioning,) but the differences in ranking of the treatment groups were not statistically significant.

The correlation between teacher high-order questions and pupil high-order questions was also studied, a significant negative correlation being found in the final teaching session for the no-cueing group. All groups showed the same trend in this session. Taking into account limitations of small sample and low-frequency data, the author concludes that:- "Results of the present

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study generally support the hypothesis that cueing model presentation would help beginning teachers focus on specific behaviours to be learned."

20. CODWELL, J.E. (1969). Demonstration of the effect of an adaptation of micro-teaching on the instructional behaviour of rural school teachers.
Research designed to evaluate an adaption of microteaching to rural centres taught groups of twenty-three pupils for twenty-five minutes during a twelve week teaching laboratory. Video tape recording was used for self-feedback and peer-instructor feedback. Pre- and post-ratings for competence interaction and attitude were made for actual and microteaching performance with the Stanford Teacher Competance Appraisal Guide, Ryan's classroom observation record and the Minnesota Teacher Attitude Inventory. Significant improvement was shown in all three centres on the three dependent variables but with between factor and between-centre differences. Actual and microteaching raters tended to agree. No significant differences resulted from variables of sex, levels of teaching and teaching experience.

21. COOPER, J.M. et al (1973). Specifying Teacher Competencies.
One of a series of papers presented at the 1972 annual conference of AERA. The general topic was 'Are there basic skills of teaching?' The authors consider the problem from the point of view of a competency-based teacher education programme. Several issues related to the specification of teacher competencies are considered. They consider more the process of defining competence without actually identifying any.

22. COOPER, J.M. and ALLEN, D.W. (1970). Microteaching : history and present status.
This article was prompted by the growing use of microteaching in America without due regard to its validation through research. It defines the process, outlines its history and lists twelve points of rationale as made by authors in the field. Various applications are discussed including pre-service, in-service, microcounselling and supervisor training, with detail of the processes involved and examples of their application. It outlines evidence of the effectiveness of microteaching and its various elements, concentrating on the experience of others more than empirical research. A summary of those research findings is also included and areas requiring further research are discussed. An appendix lists and describes teaching skills and an annotated bibliography containing articles published up to the end of 1969.

23. COTRELL, C.J. and BICE, G.R. eds. (1969). Technical teacher education seminar proceedings : microteaching and video recording.
This volume contains seven studies on microteaching as presented to the 3rd Annual National Vocational Technical Teacher Education Seminar at Ohio State University. From all six studies no significant between group differences in improvement were found no matter what technique was being applied and in almost all cases all subjects improved significantly as a result of the microteaching experience. In the first study a series of four experiments examined teacher educator supervision on a personal or remote level with or without video feedback (and 2nd track critique) and remote supervision with video models and self-critique, all under laboratory conditions and peers versus high school pupil classes under classroom conditions. High satisfaction was subjectively expressed by participants in all techniques and in the last experiment the highest satisfaction was associated with video feedback and high school pupil classes. In the second study video or non video feedback from peer and school pupil classes were compared in short and long sessions in the light of teacher performance and level of self confidence. The subjective opinion of participants pointed to the value of pupil classes and short sessions which were considered just as effective as long sessions. The third study used remote supervision with audio-phone and video-phone methods and compared it with normal face-to-face supervision. Pre and post confidence levels and satisfaction were taken into account; time and money elements were also studied. The only between group difference was found in total hours, personal supervision being the most expensive.

The fourth study compared self, student, peer and teacher-educator critiquing. A positive opinion shown by the self-critiquing group was the only factor which led to this feedback technique being recommended.

In the fifth study, microteaching with and without videotaping was compared with conventional peer teaching and video recording of practice teaching.

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Teacher satisfaction, teacher-educator opinion, and time and cost factors were included. Subjective opinion pointed to the need for video feedback with high school pupil classes although the video recording created the most expense.

The sixth study included remote feedback in an in-service setting via videophone, video-mail or video self-evaluation, all supplemented by instructional and illustrative models. Performance gains and satisfaction were equal although teacher mannerisms changed most for the last two groups. In the last study microteaching and video feedback for microsupervisors were examined in a group and individual setting. An instrument for rating supervisory skills as well as supervisory models was developed. With all studies the subjective opinions and reactions of leading participants in the institutions involved are included.

24. CYPHERT, F.R. and ANDREWS, L.O. (1967). Using the videotaper in teacher education.
A plea to place the "hardware" of teacher education in its proper perspective. Ten current uses for video recording are listed and the authors argue that such wide use of the equipment has outstripped evaluation and that enthusiasm for the new medium has not been totally justified by research based on poor design. They propose that the initial use of videotaping could be more fruitfully replaced by an analysis of the needs of particular teaching programs, and they tentatively put one forward. Seven dichotemous approaches to videotaping illustrates the complexity of the situation. Research into the economic and content aspects of education is recommended for the enhancement of this valuable equipment.

25. DILLION, R.D. and PETERSON, R.L. (1971). The influence of videotaping techniques on student-teacher behaviour in the classroom.
Prompted by the teacher talk syndrome; this study uses the Flanders system of interaction to discover if student-teacher interaction can be modified by videotape critiquing. Ten student teachers were divided into two groups one being audiotaped (not heard but critiqued) on the pre-test and one being videotaped (seen and critiqued). Both groups were videotaped on a post-test. Although the two groups showed an increase of student talk in their lessons, only the video-taped group showed a decrease in teacher talk. This latter group used more indirect teaching and interaction procedures.

26. DUGAS, D.G. (1967). Microteaching : a promising medium for teacher re-training.
A microteaching program for language teaching is described. Two cycles within the program are outlined. In the second cycle attention was focused on student reactions during sessions. Subjective reactions from participants and staff were positive.

Recommendations made include using microteaching to develop self-evaluation, which can be measured by correlation with staff evaluation, or evaluation of teacher performance by a board of specialists, each concerned with his own domain. More camera focusing on pupils during sessions is also recommended as an aid to honest self evaluation.

27. ELASHOFF, J.D. (1969). Analysis of co-variance.
A revealing article on analysis of co-variance and its use in comparing treatments. With so many studies in microteaching using this statistical procedure, the six conditions which must be satisfied for it to be a valid technique are of interest. They include random assignment of subjects to groups and no slope treatment interaction, and methods of checking data to see if they have been fulfilled are given.

28. FLANDERS, N. (1973). Basic Teaching Skills Derived from a Model of Speaking and Listening.
This is one of a series of papers presented at the 1972 AREA annual meeting. The papers deal with the question 'Are there basic skills of teaching?' Flanders attempts to analyse the elements of speaking and listening in an order to identify teaching skills basic to a teacher/pupil interaction situation. Four phases in the speaking, listening process are identified and attempts are made to consider the skills within each phase.

29. FORTUNE, J.C., COOPER, J.M. and ALLEN, D.W. (1967). The Stanford summer microteaching clinic, 1965.
This article describes the pre-internship microteaching program at Stanford

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University in 1965, the technical skills taught, and the criterion measurements used. The program was judged to be a success, but the ability of the Stanford Teacher Competence Appraisal Guide to evaluate specific skills as opposed to overall teaching performance was thrown in doubt and the need to train supervisors in the use of video-taperecorder was revealed.

30. FORTUNE, J.C. (1967). Toward a research strategy to investigate attributes of teacher behaviours.
Research into classroom teaching and practices through a microteaching format to utilize the complexities of the classroom and the control of the laboratory 3 research studies into teaching skills along these lines are described. The first used intern teachers teaching 8 groups of 5 students to ascertain the generality of the teacher ability to explain social studies material over different groups and topics. Correlations showed generality over groups only, with teacher clarity correlating highly with teacher effectiveness. In the second, 30 teacher trainees taught 2 10 minute lessons and were able to generalize their ability over content and groups. 4 success factors included providing opportunities for verbal practice and reinforcing correct responses. The third is an on-going study using elementary school teachers teaching different content. Results are not reported.

31. GUELCHER, W., JACKSON, T. and NECHELES, F. (1970). Microteaching and Teacher Training - A Refined Version.
A report of the successful refining of the Stanford approach by the University of Chicago. Problems such as poor co-ordination between skills and lesson idiosyncralic supervision unreality, gimmickry, and poor distinction of the nature of skills had been encountered in their microteaching clinic. Lack of improvement between the teach and re-teach cycles was blamed on student failure to think out their lessons. All this led to the insertion of 5 new stages in the Stanford process designed to move microteaching away from the practical approach to a position between theory and practice,
1. The practicum - to show that in a good logically structured, well planned lesson reinforcement is tied to subject matter of the lesson and applicable to the pupils experience. 2. Initial peer group microteaching - as an anxiety reduction measure. 3. Seminar in supervision of microteaching to overcome shortages in trained supervisors and leading to further student insight into lesson preparation and presentation. 4. Skills session in microteaching - a seminar on the nature of skills as dynamics of the lesson - hence the 'dynamic' rather than 'component' skills approach. 5. Microteaching experience with pupils. Here a pre-teach supervisory conference centred on the nature of the lesson and its place in a hypothetical course, skills to be examined and criteria for success.
Overall, the concept of a nuclear lesson was developed where each good lesson 'holds the nucleus of several subsequent learning experiences' and this concept is presented as the bridge between microteaching and 'real' teaching.

32. HISCOX, SUZANNE B. and VAN MONDFRANS, A.P. (1972). Feedback Conditions and Type of Teaching Skill in Microteaching.
Research to determine the effects of audio and video tape feedback on both verbal and psychomoter skills when all other aspects of the Stanford microteaching model were controlled. Questionnaires, interviews with supervisors, and student evaluation of teachers provided data for analysis. Results showed no difference in the effectiveness of audio and video tape feedback.

33. HARRIS, W.N., LEE, V.W. and PIGGE, F.L. (1970). Effectiveness of microteaching experience in elementary science methods classes.
An experiment comparing multiple microteaching with conventional single teaching experiences within a science method course emphasising the 'discovery' approach. A pre-course and post-course administration of a Teacher Behaviour Evaluation Instrument measured both personal items such as personality, approach and speech patterns and classroom techniques with peers. 48 students were formed into 3 experimental (microteaching) and 3 control groups. A "t" test at the .05 level showed no statistically significant gain scores for either group on personal items. However with both classroom techniques and combined scores both groups gained significantly, with the experimental group performing significantly better than the control on the post-test.

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34. JAMES, P.E. (1970). Television in teacher training.
A report on the use of television for classroom observation. 15 student teachers were shown a 60 minute videotape from a 90 minute lesson on building electric motors to 25 3rd form boys. The formers' reactions indicated that the videotape was seen as useful in combination with, but not as a substitute for, normal classroom observation. Included is a report on the application of microteaching to the training of ship-building apprentices in Glasgow. A 5-point rating scale showed a faster improvement in a particular skill when microteaching was used. Details of the equipment used for the observation experiment and its lay-out are comprehensive.

35. JENSEN, L.C. and YOUNG, J.I. (1972). Effect of Televised Simulated Instruction on Subsequent Teaching.
A study to determine whether simulated instruction improved subsequent teaching. Subjects in the experimental and control groups were trainee teachers enrolled in the same teacher education program. The experimental groups of seventeen students undertook the additional simulation assignment consisting of microteaching a seven-minute lesson to four or five peers.

Teaching performance was measured with the Teacher Performance Evaluation Scale (Sinha, 1962), the 42 items being factors analyzed to produce six behaviour categories:- (1) personality traits, (2) warmth of teacher behaviour, (3) general classroom atmosphere, (4) lesson usefulness, (5) teacher interest in pupils, (6) teacher interest in pupil achievement. Teaching performance was measured three times during an eight-week teaching round, and it was found that the experimental group achieved higher scores on the first five factors, although this superiority was sometimes not evident until the third measurement (after six weeks of teaching).

36. JOHNSON, J.A. and TETTEMER, R. (1970). The use of portable videotaping equipment in teacher education.
A 37 item instrument called "The Role of a Supervisor of Student Teaching" was administered to 224 students starting a microteaching course to discover their exact expectations. Principle axis factor analysis showed 3 strong rotated factors an instructional expectation factor, an unhampered practice expectation factor and a group sharing of experiences expectation factor. The author concluded that "after some instruction in the fundamentals the students want to learn to do their own thing" which more closely approximates the non-directive style of supervision.

37. JOHNSON, R.E. (1968). The effects of prompting; practice and feedback in programmed videotape.
A study designed to test the optimum method for teachers to observe pupil behaviour through a videotape. 84 randomly selected beginning teachers were divided into 4 treatment groups. Group I were shown 21 short pupil-teacher interaction scenes, given instructions, prompts, overt practice and immediate feedback. For Group II the prompt practice and feedbacks were omitted. Group III were given a lecture on observing intended pupil behaviour. Group IV received no experimental treatment.

An analysis of variance showed significant between-group differences at the .001 level on a 21 item multiple choice test. Duncan's New Multiple Range Test showed the mean of Group I to be significantly greater than the mean score obtained in any other group indicating the benefit gained when prompting and practice and feedback accompanies observation. The fact that Group III significantly out-performed Group IV indicated that a lecture is better than no treatment al all.

38. JORDAN, F.R. (1971). Teaching Teaching - A report on two programs.
A detailed description of the 1970 and 1971 physical education teaching programs at Sydney University. Both were designed to induct students gradually into the teaching situation but emphasis on isolated teaching skills in 1970 gave way to a more structured hierarchial program in 1971 ranging from "skills" at the base to general plans and strategies at the highest level. Also an adherance to microlessons in 1970 was followed in 1971 by a growth in the class size during the program to allow for different instructional behaviours in large group situation. The schedules skills and strategies taught in both years are outlined.

Evaluation was based on questionnaires and teacher ratings. Both years

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showed a clustering in their distribution around the "satisfactory" category, and poor transfer to large group teaching in terms of organisation and control. Also in 1971 a difficulty in applying general strategies to specific situations was suggested. But in both a higher instance of confidence during practice teaching was shown.

39. KALLENBACH, W.W. and GALL, M.D. (1969). Microteaching versus conventional methods in training elementary intern teachers.
A comparison between microteaching and conventional techniques of teacher training by evaluation in both situations. 37 elementary school interns formed 2 treatment groups. The microteaching group gave 20-25 hours of their time, the conventional group gave 125 hours. The Stanford Teacher Competence Appraisal Guide was used to rate pre and post treatment 5 minute microlessons and post treatment classroom teaching. The instrument for the Observation of Teaching Activities was also used for the latter in the same and in the following year. T. tests showed no significant differences between the groups in any post treatment ratings and adjustment for significant pre-treatment ratings differences did not produce significant results. Discussion in the article takes into account the time differences between the two programs. Of interest is the indication that the STCAG applied to videotaped microlessons is a good predictor of teaching effectiveness. Students exhibited stability in teacher effectiveness over and after the training period.

40. KORAN, J.J. (1971). A study of the effects of written and film mediated models on the acquisition of a teaching skill by preservice elementary teachers.
This studies the ability of written and film-mediated models to generate written observation - classification questions by 31 undergraduate education majors. Subjects' written questions were rated on 3 trials. Although the film group outperformed the written group a significantly lower score for the latter on the pre-test precluded between-group differences conclusions. A one-way analysis of variance showed both experimental treatments producing significant changes whereas a control group did not.

41. LANGER, P. (1969). The range of teaching skills that can be changed by the minicourse model.
This describes a typical minicourse, and the procedures followed for developing, revising and validifying it. This is illustrated by the successful development of the minicourses 1, 3, 8, 5 and 2 and the shifts in teacher behaviour produced by them. An appendix gives the instructional sequences for these minicourses and the main field data obtained for them.

42. LANGER, P. (1969). Minicourse : Theory and Strategy.
This article explores teacher training programs in general and the minicourse specifically. It is felt that the former should divide its outcomes into behavioural responses and conditions under which they are emitted, as well as distinguish between pupil and teacher behaviour.

A valid training operation should specify all input needed. Also, evaluation should take place with specified input. The minicourse is seen as meeting these issues where outcome is anticipated by input.

The instruction materials and activities which make up the input of the minicourse and the problems involved are described. The evaluation of the minicourse is seen as a never ending process in terms of teaching behaviour and pupil reaction.

43. LEGGE, W.B. and ASPER, LOIS. (1972). The Efect of Videotaped Microteaching Lessons on the Evaluative Behaviour of Pre-Student Teachers.
The purpose of the study was to ascertain the extent to which participation in videotaped microteaching lessons by junior-level students of education enhanced their abilities to evaluate teaching behaviour. Both the control group (88 students) and the experimental group (26 students) were participating in student teaching for two hours each week. The experimental group had five microteaching lessons over fourteen weeks. These lessons were short (up to fifteen minutes) with five or less pupils and a very narrow lesson purpose. Each subject evaluated her own lesson using specially structured forms; no lessons were discussed with supervisors until final evaluations were completed.

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At the end of the period, a forty-five minute tape of a teaching lesson was viewed by the experimental and control groups, and by four master teachers who were specially selected on the basis of quality service. All subjects evaluated the tape using the first eleven items of the Stanford Teacher Competence Appraisal Guide.

The results showed a significant difference between the mean evaluations of the experimental and control groups for all categories tested. There was striking similarity in the scores of the master teachers and those of the experimental group in total evaluation, and in the category of lesson presentation. In the areas of aims and lesson planning this was less apparent. The authors conclude that microteaching hold great promise for working with trainee teachers.

44. LEONARD, B.C., GIES, F.J. and PADEN, (1971). The effect of selected media feedback upon the interactive behaviour of student teachers.
A comparison of the effect of added audio feedback, added audio feedback plus video feedbacks and normal supervisory feedback alone on verbal teaching behaviour. 12 student teachers were assigned to 3 experimental groups. Pre and post videotapes of all students teaching were coded according to the Flanders Verbal Interaction System. The Wilcoxen matched pairs signed ranks test aided by the Kruskal Wallis one-way analysis of variance showed significant gain scores in 'indirect teaching influence' and 'student talk' for the video feedback group only, although the differences in the magnitude of change between the 3 groups was not statisitcally significant.

45. LETT, W.R. (1971). Some difficulties of role adoption for the beginning teacher.
A 6 month microteaching program with 24 graduate teacher trainees at Latrobe University was subjected to intensive research to discover difficulties encountered by students in appropriate role adoption. Analysis was based on a 3 part self-rating scale, a descriptive qualitative analysis derived from the Bass Orientation Inventory Manual as well as measures of motivation. The program involved 2 simulated (with videotape) and 2 actual (without videotape) teaching experiences. Results showed student difficulties in objectively assessing and operationalizing a set of teaching concepts, failure of the supervisory feedback to adequately assist the student, student teaching faults including teacher-centred instruction, little attention to testing, low cognitive level of testing and questions and lack of clarity. The failure of the microteaching program to combat the professional content-control approach at the expense of interaction with pupils is thus implied.

46. LIMBACHER, P.C. (1971). A study of the Effects of Microteaching Experiences Upon the Classroom Behaviour of Social Studies Student Teachers.
A report on an experiment at the Teaching Techniques Laboratory at the University of Illinois to discover the effect of microteaching experiences on classroom teaching behaviour. Two groups of 25 social studies student teachers were involved, one experiencing 6 to 9 microteaching sessions of 10 minutes to high school students or college freshmen and one acting as the control. The teacher performance Appraisal Scale administered on 2 traits for pupil evaluation tended to show the superiority of the experimental group. The Illinois Teacher Evaluation Questionnaire given during the program again for pupil evaluation showed the experimental group being rated significantly higher. The hypothesis that the experimental group would be judged by their teachers to be ready earlier to assume full responsibility for classroom instruction, was not supported. Flanders interaction analysis also showed no difference in the Direct/Indirect Ratio but an experimental error affected this result.

47. McALEESE, W.R. and UNWIN, D. (1971). Microteaching: a selective survey.
A survey of microteaching supported by selected research studies. Apart from its development and description aspects dealt with include the supervisor - his role, faults, and negative aspects related decisions as to sex, subject matter, level of experience etc., evaluation instruments their criteria and conditions. The applications of the microteaching format are listed and suggested areas for further investigation are test instruments, protocol, supervision and modelling.

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48. MacCOLLUM, R. and LADUE, D. (1970). Microteaching in a teacher education program.

A description of EPICT: The Elementary Program for Inner City Teachers, Temple University, Philadelphia, which uses microteaching to add realism to the overall course. The specific teaching skills taught are listed and two types of microsessions illustrate the procedures involved.

49. McCOMBS, M.A. (1967). Chicago's Television College (Economics of) in New Educational Media in Action; Case Studies of Planners.

A cost breakdown in terms of output for the Chicago Television College (Economics) with implications for developing countries.

50. McDONALD, F. and ALLEN, D.W. (1967). Training effects of feedback and modelling procedures on Teaching Performance.

A detailed description of three experiments from which the authors concluded that the provision of reinforcement and discrimination training will significantly improve the performance of student teachers in the acquisition of a skill; that there appears to be no optimum combination of distributing practice and feedback in a microteaching program and perceptual modelling is more effective than symbolic modelling with the optimal combinations of presentation and feedback being strong symbolic and maximal perceptual modelling with prompting and confirmation feedback.

51. McINTYRE, D. (1971). Three approaches to microteaching: an experimental comparison.

This study investigated two ways of reducing the cost of microteaching. These were the use of peer feedback and the grouping of students into 3, one actually reteaching and 2 observing planning and analysing only. 130 students were involved in a teaching course based on 5 teaching skills. For the first skill all received supervisor feedback and reteach. For the second skill no supervisor feedback was given. Experimental comparisons were made on the last three skills. One group of 12 practiced individually with supervisor and reteach. One group was divided into groups of 3 working with supervisors but only 1 student in each actually reteaching. The last group, did the same but without supervisor feedback.

Results in terms of teaching behaviour were assessed by a 2 way analysis of variance. For students working in groups supervisors did not affect performance. Over all groups there was some evidence of the superiority of reteach groups. Those working individually with supervisors were significantly better than those working in groups without supervisors.

No between groups differences in ability to evaluate teaching came from supervisors. In this ability differences favoured group work on two out of thirteen variables. Responses to Questionnaires showed students working both individually and with tutors were evenly divided as to which was superior. Those who worked with supervisors had a more favourable attitude toward teaching.

Overall, results were considered disappointing in terms of justifying the more economical approach to microteaching.

52. McINTYRE, D. and DUTHIE, J. (1971). Students' Reactions to Microteaching.

A report of questionnaires administered to students over a period of 4 years, the course in Education being adjusted by the experience gained the year before.

Different microteaching skills were seen as needing different lengths of lesson, with the preference tending toward the longer lesson. Estimates of time for replanning also varied according to skill being taught, with the average one hour. This was used to justify a split cycle of the teach-reteach pattern. Preferences tended toward a spread out course rather than a 4 week block of microteaching. Most students in the first two years found difficulty in concentrating attention on specific skills and in the 3rd and 4th years more than half reported some difficulty. Tutors were seen to be more valuable than work with peers.

The basic components of microteaching models reteach and particularly videotape playback were the most valued parts of the course. Students felt that

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relating psychological theory to skills was not emphasised enough.

Other questions dealt with the effects of the course on students. Preference expressed overall were generally in line with research into the most effective variables.

53. McINTYRE, D., McKNIGHT, P. and WHITE, D. (1972). Diagnostic Assessment of Teaching Skills.
A detailed description of 6 teaching skills observation instruments developed at Stirling University as an improvement on the evaluation type Stanford rating scales and as a substitute for normal supervisory interpretations and judgements. The 6 skills are varying the stimulus, reacting, questioning for feedback, higher order questioning and probing, clarity of explanation, and use of examples. For each observation instrument the paper gives a definition of the skill, the observation procedures, an interpretation guide and tentative reliability figures. Overlap between skills is admitted and in fact considered desirable for the variety of perspectives gained.

54. McKNIGHT, P.C. (1971). Microteaching in Teacher Training: a review of research.
A review of research which divides aspects of microteaching into setting and equipment, participants, teaching skills and programmes. The bulk of the article concerns the components of modelling, feedback and supervision. For modelling the author concluded from research evidence that videotape models are effective additions to a programme, particularly with accompanying commentary. He sees feedback as best presented utilizing both videotape recording and supervisory critique. A redefinition of the role of the relative effectiveness of modelling and feedback of the supervisor is cited.

55. McPHERSON, J.J. (1971). Recent developments in Research on the Use of Audio-Visual Media in Teacher Education in the United States.
This article includes brief sections on microteaching and the minicourse. The Perlberg studies of 1968 are cited as evidence of the value of microteaching but the hurried use of it before adequate research is suggested by a study by Reed (1970) which showed a greater increase in teaching skill but a parallel decrease in favourable attitudes to teaching. The principles of the minicourse are described and some of the ones available are listed. Developments in simulation approaches are discussed in the bulk of the article.

56. MEIER, J.H. (1968). Rationale for and application of microteaching to improve teaching.
The author has coined the term micro-training to widen the scope of microteaching. Examples of microteaching projects given include those conducted by the Rocky Mountain Educational Laboratory (remote: learning disabilities) and the Jefferson County public school system (Colorado; in service). Applications of microteaching given include remedial work for in-service teachers.

57. OLIVERO, J.L. (1970). Microteaching: medium for improving instruction.
This book is designed to give students a 'capsule presentation' of the concepts involved in microteaching.

58. OWENS, L. and HATTON, N. (1971). Telling it Like it is.
A frank and detailed account of the 1970 microteaching project at Sydney University. The student experience in microteaching was supported by situational teaching and a curriculum course and teaching skills were measured by a Skill Observation Record (SKOR). On the more or less subjective evidence of a survey and teacher competence observation record, the skills were seen to transfer to the normal classroom situation.

59. PERLBERG, A. et al (1971). Studies on the use of videotape recordings and microteaching techniques to improve on university teaching.
A report of a study on microteaching in higher education and particularly on statistical results for his Israel study which arose out of the experience gained from the former. Firstly, when evaluated as a motivating force for behavioural change when used as a self confronter, the videotape recorder was found to be effective in both studies. As an evaluation of the microteaching process in the Israel study, pre and post tests showed statistically

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significant improvement on each of 7 teaching skills. The relationships between attitudes and acceptance of behavioural change was also studied, with perseverance and attitude to the concept of microteaching in that order being the best predictors.

60. PERLBERG, A. and O'BRYANT, D. (1970). Video-recording and microteaching techniques to improve engineering instruction.
A description of the application of microteaching techniques to the field of engineering instruction. Three faculty members and a specialist in education studies assisted 12 senior faculty members on both an individual and group model exhibiting a positive and desirable change in teaching behaviour. Aspects studied included motivation of staff members and the professor consultant relationship. The combination of individual and group approaches is recommended with sufficient attention to motivation and length of program.

61. PERROT, E. and DUTHIE, J. (1970). Television as a feedback device: microteaching.
A general article on microteaching and on CCTV as a device to allow student and tutor to share a common experience. The difficulties include the problem of what is "good" teaching and the need to distinguish teaching behaviours. The authors describe attempts to do the latter at Stanford and continue with a description of the Stirling course with its integration of microteaching into a theoretical course. The equipment and organization of this system are given in detail. Student response to the system is seen as encouraging.

62. PFEIFFER, ISOBEL L. and REIGHARD, RICK (1971). Micro-Teaching Practicum in Teacher Education.
Description of a program commenced in 1968 at the University of Akron in which the undergraduate student teachers are supervised by graduate students who also videotape and analyse their own supervisory performance and that of their fellow graduates.

63. POLITZER, R. (1969). Microteaching: a new approach to teacher training and research.
A general article on microteaching, its various elements and the possible variations within those elements with particular emphasis on teaching foreign languages. The most desirable combination of variables from Stanford Research evidence is put forward and research into the value of various teaching strategies is recommended.

64. REED, C.L., VAN MOND FROINS, A.P. and SMITH, I.M. (1970). Effect of microteaching, directive and non-directive lectures on achievement and attitudes in a basic educational psychology course. Effect of mode of feedback in microteaching.
All combinations of directive lectures (5 on specific skills) non-directive lectures (5 on interpersonal relationships) and microteaching (5 with 5-10 minute lessons) were compared in a 2 x 2 x 2 factorial design to gauge the effect on teaching skill and attitude toward educational psychology and microteaching. 87 undergraduate students were randomly divided into the 8 experimental groups. Student response was gauged by a 56 item evaluation form and teaching skills were evaluated by peers with the standford Teacher Competence Appraisal Guide. The statistical procedure used was a 3 way Analysis of Variance with unequal cell size. Both microteaching and directive lectures were effective in improving teaching skills. Only the 2 types of lectures led to more positive attitudes towards the course. Paired treatments particularly non-directive lectures and microteaching, tended to lessen possitive attitude and lower scores in teaching skills. 3 treatment groups showed strong favourable attitudes but not the corresponding strong performance.

65. SALOMON, G. and MACDONALD, F.J. (1968). Pre and Post test reactions to self-viewing one's teaching performance videotape.
A study to determine the effect of initial self-viewing of a videotape in terms of teachers cue selection and attitudinal changes and their relationships to self-satisfaction when no modelling, cueing or guiding is given. 38 interns taught a 50 minute lesson to 25 5th and 6th grade pupils and viewed the videotape alone. Before and after the self view they were interviewed and administered an attitude questionnaire. Statistical procedures used were Analysis of variance, Scheffe's method of Paired comparisons and Dixon and Masey's

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Rank-sum test. Interns were divided into high and low self-satisfaction groups. Attitudinal changes and cue selection were found to be clearly related to self-satisfaction, that is when no model is given the only feedback being received is that related to the subject's own expectations. No control group was used.

66. SHAVELSON, R.J. (1973). What is the Basic Teaching Skill.
One of series of papers presented at the 1972 Annual Conference of AERA. The general topic for discussion was 'Are there basic skills of teaching?' Shavelson argues that the skills such as questioning, reinforcing, explaining etc. are but alternative acts which the teacher can select from in making a decision as to how to proceed in the teaching act. The author concluded that the basic teaching skill is decision making.

67. SHIVELY, J.E. et al (1970). Effect of mode of feedback in microteaching.
This study compares 4 types of supervisory feedback on videotape, audiotape, live lesson or the Stanford Teacher Competence Appraisal Guide. 37 educational psychology students were randomly assigned to 8 groups, 2 groups per treatment, and each participated in a microteaching experience. The teach and reteach scores on the STCAG were used as the covariate and the criterion in an analysis of covariance (Winer 1962). The teach and reteach scores on an attitude scale were used in an analysis of variance. In terms of teaching performance (STCAG) the audiotape was the most effective, the live lesson least effective. The STCAG was also effective in producing change. In terms of attitude the audiotape and videotape groups were significantly higher. The author concluded by recommending the less expensive audio feedback.

68. SHORE, B.M. (1972). Microteaching: A Brief Review.
A general description of microteaching with a typical sequence, the variables such as skill emphasis length of lesson studies on the carry over of microteaching and the advantages and disadvantages as put forward by Allen and Ryan (1969), Craig (1969), Kallenbach and Gall (1969) and Borg (1968-70). He disputes Borg's implied criticism of microteaching by his development of the minicourse with its emphasis on structured self evaluation rather than supervisory feedback.

69. SHORE, B.M . (1972). Some Applications of Microteaching in Higher Education.
A short article which lists 4 main applications of microteaching and illustrates its flexibility by describing one course in second languages showing how the procedure was adapted to suit specific needs.

70. SORENSON, G. (1967). What is learned in practice teaching?
An impromptu instruction to "list the things you would tell your best friend to do in order to get a grade 'A' from your present training teacher" was given to 163 secondary education students after 8 weeks of practice teaching. Responses related to 9 classified areas, the 3 most common being student - supervisor relationship lesson preparation and classroom control.

Ambiguity of language, cynicism and hostility were featured. Apparently differing supervisor concepts concerning the teachers role leads to attention to non-instructional variables. A gap between theory and student activity was evident with theory not playing a part in practice teaching. Conclusions for teacher training procedures are made.

71. STEWIG, J.W. (1970). What should college supervisors do?
A study of student teacher and supervisor perception of the role of the ideal supervisor. Questionnaire relating to practices in supervision and quality of supervisors was administered to 641 elementary and secondary major students and 67 supervisors. Secondary and elementary showed similar responses. Only the supervisors were receptive to the idea of the supervisors as an affector of perceptions and an agent of change.

Elementary groups saw the co-operating teacher as the most satisfying aspect and for secondary groups it was the children. Over all, student and supervisors perceptions differed, in particular in regard to systems of analysis which were important to the supervisor only.

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72. SUSSMAN, H. and SMITH, H. (1970). Sensory Feedback modes as Determinants of Learning and Memory.

The effect of 4 types of sensory feedback on learning and memory were compared using a computer controlled oscillograph. The feedbacks were active or passive, visual or non-visual, the latter being a compensatory or negative feedback. The Neuman-Keuls range tests, and a 5 way analysis of variance were carried out on differences in a memory test. The compensatory feedback was the weakest learning mode and the active visual modes were just as good as the purely visual modes.

73. TRAILL, R.D. (1971). The effects of Using Interaction Analysis as a Means of Assisting Student Teachers to Analyse Teacher Behaviour.

This study evaluated feedback on interaction analysis for self-evaluation as a means of overcoming the barrier to communication created by the supervisory evaluation. 54 elementary student teachers and their supervisors were instructed in the Berkeley modification of the Flanders Interaction Analysis system (BIAS). During student teaching students formed a control and an experimental group, the former being given the analysis feedback. Results were based on BIAS observation procedure (15 categories and 3 ratios), pre and post tests of the Teaching Situation Reaction Test (TRST - attitude to teaching process) and of the Adjective Check Test (ACL - values regarding the ideal teacher). The TRST scores showed the treatment group improving significantly as measured by t-tests. Multi-variate analysis with the T^2 test on the ACL showed no significant difference had occured. On the BIAS scores muntilvariate analysis revealed a significant f-ratio univariate tests on the categories showed 12 being significantly different. All 3 ratios were significant on multivariate analysis with the T^2 test. Overall, the treatment group changed significantly toward indirect teaching behaviour and supervisors were more analytical and less evaluative. However, not all students positively approved of the Interation Analysis procedure.

74. TUCKMAN, B.W. (1970). A technique for the Assessment of Teacher Directiveness.

The student perception of teacher style (SPOTS) was developed to measure teacher directiveness s a more efficient alternative to the Flanders and OSCAR systems and a test of its reliability and validity is reported cn. The SPOTS, a 9 point 32 item rating scale focussing on intensity or frequency of specific behaviours rather than evaluative dimensions was administered to the students of 22 male teachers. Two parallel scales, the Observer Rating Scale (ORS) and the Teacher Style Checklist (TSC) were completed by observers. Pearson product moment correlations, item analysis and factor analysis were the statistical procedures used. Internal consistency was established, inter-judge reliability was high, correlation between SPOTS and ORS was high and correlation between SPOTS and TSC was moderate. One major factor in SPOTS was identified.

75. TUCKMAN, B.W., KENDRICK, M. and HYMAN, R. (1969). The modification of Teacher Behaviour: Effects of Dissonance and Coded Feedback.

A study of the effect of dissonance on self-perception and behaviour in a 4 x 2 factorial design involving four types of feedback, audio tape and control, and two degrees of magnitude of discrepancy between self-perception and observed behaviour.

The behaviour of 24 in-service high school teachers was coded by the Flanders system, scores being obtained on 5 category combinations and teachers completed the self perception inventory based on time devoted to Flanders categories. Both these were on a pre and post treatment basis. A percentage discrepancy score between self-perception and feedback information was also obtained. Analysis of variance showed high discrepancy groups changed their discrepancy scores significantly more than low discrepancy groups with only verbal feedback groups changing their score significantly more than the control. In terms of perception high discrepancy led to a significant change. In terms of behaviour verbal feedback led to a significant change. Teacher behaviour and self perception was changed by discrepancy and thus dissonance.

76. TUCKMAN, B.W. and OLIVER, W.F. (1968). Effectiveness of feedback to teachers as a function of source.

A comparative study of the source of feedback taking into account teacher experience. 286 in-service teachers were given student feedback, supervisor feedback, both or no feedback. Information from this questionnaire was also used to determine change in teacher behaviour. In a 3 x 2 x 2 analysis of

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variance for the total change scores factors were student feedback (2-present or absent), supervisor feedback (2) and level of experience (3). Only the student feedback factor had a significant effect and no interactions reached significance. When the four feedbacks were compared using the Duncan Multiple-Range Test it was seen that student feedback and both were statistically comparable. Adding supervisor feedback did not generate further change and when given alone led to negative change.

77. TURNEY, C. (1970). Microteaching: a promising innovation in teacher education. A description of the 1969 Sydney University Education Microteaching Project based on procedures and principles developed at Stanford University. The facilities and equipment included the outside broadcasting van transported to a preparatory school. Each of 10 final year students taught pupils from Grade 1 up to Grade 6 during the morning and viewed the tape in a group discussion context in the afternoon. Students practiced 10 teaching skills using specific curriculum suggestions. Rating scales were devised for each skill. A comprehensive scale showed substantial progress for most students in teaching skills, teacher-pupil progress for most students in teaching skills, teacher-pupil relationships etc. Students judgements were most favourable and their comments and suggestions are included. As a result of these a collection of models of various skills was made. The wider implications of the project included microteaching as a context for integration of theory and practice in teaching.

78. TURNEY, C. et al (1973). Microteaching: Research Theory and Practice. This book has been written principally for the Australian scene. The first three chapters provide a review of microteaching research and the effectiveness of the teaching skills approach as well as a survey of the use of microteaching in Australia. This is followed by a useful discussion on problems of programme implementation. Of particular interest is the list of teaching skills with the research studies, theoretical formulation and development work relevant to each skill.

79. VLCEK, C.W. (1970). Portable VTR Application Technique. Discusses the technical problems involved and ideal physical arrangements for setting up television equipment for videotaping classroom activities in the light of its various applications, particularly physical education.

80. WAIMON, MORTON, D. et al The Effects of Competency-Based Training on the Performance of Prospective Teachers.
The paper reports testing of a treatment designed to help trainee teachers perform pretutorial teacher behaviour (lesson planning, etc.). The treatment is termed MICROPLANNING; it consists of six competencies - rationale, behavioural objectives, knowledge structure, selecting content, teaching methods and teaching actions.

The experimental group consisted of ten volunteers who took a sequence of three courses - microplanning, microteaching and clinical teaching. The control group of ten students were matched with respect to sex, class, G.P.A. and hours of university credit; they took the regular teacher education sequence with the same number of hours as the experimental sequence. At the end of the sequence each student gave four half-hour lessons to a group of five-to-ten pupils and administered a test measuring both recall and ability to reason with the material. The experimental subjects also completed the Minnesota Teacher Attitude Inventory and Teacher Role Preference Inventory on a pre- and post-test basis.

Test results showed that pupils taught by the experimental group scored better on questions relating to ability to reason with the material than did pupils taught by the control group (there was no difference between the groups on questions testing recall). As was expected, attitudes as measured by the Inventories were unchanged. The authors conclude that microteaching, unless preceded by successful performance in microplanning, could be a case of misplaced emphasis.

81. WAIMON, M.D. and RAMSEYER, G.C. (1970). Effects of Video Feedback on the Ability to Evaluate Teaching.
Video feedback can focus on pupils from various angles or on the teacher or both. It was hypothesised that on a conyinuum from no feedback to the

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maximum teacher focussed feedback the latter would be superior in terms of ability to evaluate teaching. Supervisory and audio visual feedback were also compared. 40 subjects formed 4 randomly assigned treatment groups and taught 5 microlessons over 8 weeks. A control group received supervisory feedback. One experimental group received pupil focused audio visual feedback. One group was given pupil-teacher focused audio visual feedback. A final group was given teacher focused audio visual feedback. The criterion was an agreement score between student and laboratory teachers ratings on the Stanford Teacher Appraisal Guide. An analysis of variance on the experimental groups showed no differential effects from type of video feedback. A Dunnett's t-test between each experimental group and the control showed no differential effects from supervisor or audio visual feedback. The null hypothesis could not be rejected.

82. WARD, B.E. (1969). A Survey of Microteaching in Secondary Education Programmes of all N.C.A.T.E. Accredited Colleges and Universities.
Of 442 colleges and universities surveyed 176 used microteaching and of these 141 answered a comprehensive survey and formed the basis of the figure given. Findings are in terms of numbers of percentages and relate to curricular structure, how it was altered to incorporate microteaching and what modifications to the Stanford format took place. The most common method of modifying curricula was to condense the course content. Other aspects dealt with include the formats used, personnel numbers, use of VTR, composition of critique sessions, sizes of classes, time spent, skills considered most important and skills most used, and the effects of microteaching on the attitudes of student teachers and supervisors.

An overall trend discerned was for microteaching to be incorporated into general and subject methods courses. Most programs were conducted by education or audio visual departments using peer groups. A widespread lack of knowledge about the technical skills of teaching emerged.

83. WEBB, C. et al (1968). Description of a Large Scale Microteaching Programme.
A large scale microteaching programme at Brigham Young University is described in terms of its elements, a typical session and its equipment facilities and logistics. Problems of large numbers of students are overcome to some extent by students scheduling their own 30 minute microsessions with 3 or 4 peers and with limited reteach opportunities.

84. WEBB, J.N. and BROWN, B.B. (1970). The Effects of Training Observers of Classroom Behaviour.
The effect of training a classroom observation system called the Teacher Practices Record (TPOR) is measured in terms of observation scores. The system if based on agreement - disagreement of instructional practices with John Deweys experimentalism. A study of Beliefs, consisting of the Personal Beliefs Inventory (PBI), the Teacher Practices Inventory (TPI) and Rokeachs Dogmatism Scale, when administered beforehand to the 36 experienced elementary teachers showed these subjects to be unsympathetic to experimental theory behind the TPOR. Over the 5, 2 hour training sessions subjects showed fairly high reliability as measured by inter-observer agreement but validity in terms of observer-trainer agreement was not high. Where trainers tended to give low TPOR scores these observers tended to see more instances of both experimental and non experimental practices. The effect of attempts to increase validity was gauged using a specially developed criterion score for each film. The validity coefficients gained indicated that these attempts were ineffectual. Subjects also showed low stability in observation scores. Those with relatively high validity tended to have relatively higher stability. Overall, agreement between observers was found not to be an adequate criterion for unsympathetic observers.

85. WERNER, EDWENNA R. et al. The Minicourse as a Method for Training Teachers to Stimulate Divergent Thinking.
Fifty-nine students took part in a course training teachers to encourage divergent thinking. Teaching skills were acquired equally well by teachers who received audiotape feedback for their microteaching and by those who received videotape feedback.

86. WOOLSCHLAGER, R.C. (1970). Microteaching for Pre-service and In-servie Teacher Preparation.
A general discussion on microteaching as the most important innovation in

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teacher education this decade. The article defines and describes micro-teaching in terms of the variety of ways it has been used, particularly in regard to teaching business subjects. The innovation of negative teaching tapes is described and the value and best ways of presenting microteaching are discussed.

Teacher behaviours which cannot be evaluated through microteaching are listed and seen as preventing full evaluation through microteaching alone. Equipment for future methods classrooms is described with regard to the trend toward individual classroom operation.